

# Genetic predisposition to certain skin cancers may be associated with vitamin D deficiency

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Patients with basal cell nevus syndrome, which predisposes them to develop non-melanoma skin cancers, appear to be at increased risk for vitamin D deficiency if they take steps to protect themselves from sunlight, according to a report in the October issue of *Archives of Dermatology*.

"[Vitamin D deficiency](#) has been associated with an increased risk of autoimmune disease, fractures, cancer, cardiovascular disease and all-cause mortality," the authors write as background information in the article. "There is increasing concern that sun protection, recommended by dermatologists to prevent further UV damage in populations susceptible to [skin cancer](#), may result in abnormally low levels of 25-hydroxyvitamin D [25(OH)D, a blood measure of vitamin D levels], which may have subsequent detrimental effects on health."

Jean Y. Tang, M.D., Ph.D., of Stanford University Medical Center, Redwood City, Calif., and colleagues studied 41 patients with basal cell nevus syndrome, who are genetically predisposed to develop basal cell carcinomas. Individuals with this condition usually develop multiple basal cell carcinomas in young adulthood, as opposed to most cases of sporadic basal cell [carcinoma](#), which occur in the sixth to seventh decades of life. Patients with basal cell nevus syndrome generally try to prevent skin cancers by using sunscreen and avoiding the sun during peak hours.

The 41 patients had blood drawn an average of three times during the

two-year study; 23 (56 percent) were vitamin D deficient. When compared with the general population, patients with basal cell nevus syndrome had lower average vitamin D levels and were three times more likely to be deficient.

Blood vitamin D levels were lower among patients with basal cell nevus syndrome who were overweight, and in those who had blood collected in the winter compared with the summer.

Among 35 patients with basal cell nevus syndrome who completed a survey, 28 (80 percent) reported using sunscreen daily and most reported avoiding sunshine during the hours of 10 a.m. and 2 p.m. "It may not be surprising that patients with a genetic predisposition to sun-induced cancers report a high frequency of photoprotection and may be vitamin D deficient," the authors write. "However, the magnitude of this deficiency and the possible additive effect of obesity, which is common in these patients, make individuals with basal cell nevus syndrome optimal candidates for cholecalciferol supplementation."

"Furthermore, if the mechanism for the association between low 25(OH)D levels in patients with basal cell nevus syndrome is indeed photoprotection, these results may be applicable to patients without basal cell nevus syndrome who have sporadic basal cell carcinomas and for whom photoprotection is currently recommended," they conclude. "Given that sporadic [basal cell carcinoma](#) is the most common cancer worldwide with more than 1 million cases reported annually in the United States and that most patients with basal cell carcinoma survive for many years after their diagnosis, screening for vitamin D deficiency may become an important part of the care of this population."

**More information:** Arch Dermatol. 2010;146[10]:1105-1110.

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